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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,176	03/29/2001	Chien Ping Huang	55776	9088

7590

09/20/2002

Peter F. Corless
EDWARD & ANGELL, LLP
130 Water Street
Boston, MA 02109-4280

EXAMINER

GEBREMARIAM, SAMUEL A

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 09/20/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/823,176

Applicant(s)

HUANG

Examiner

Samuel A Gebremariam

Art Unit

2811

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities:
page 2, line 5 refers the substrate by reference numeral 10 in fig. 1A, which does not exist in the drawing. Appropriate correction is required.

Claim Objections

2. Claims 9 and 14 are objected to because of the following informalities: the word "substrates" in the phrase "at least one substrates" should read "at least one substrate". Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Lim US patent No. 5,925,934.

Regarding claim 1 admitted prior art teaches (figs. 1A and 1B) a substrate strip, which comprises: (a) a frame having a pair of parallel supporting bars including a first supporting bar 12a and a second supporting bar 12b, and (b) at least one substrate 11 supported on the supporting bars; the substrate being linked to the supporting bars by means tie bars.

Admitted prior art does not teach the limitation where the supporting bars are linked to the substrate by means of no more than two tie bars.

Lim teaches (fig. 11, col. 7, line 21-26) parallel bar (frame) 570 and two tie bars 530 for supporting the silicon chip 505.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the two tie bar structure taught by Lim in the structure of admitted prior art in order to simplify the manufacturing process and also cut manufacturing cost.

Regarding claim 2 admitted prior art teaches (figs. 1A and 1B) substantially the entire claimed structure of claim 1 above including the substrate is dedicated for BGA application.

Regarding claim 3 admitted prior art teaches substantially the entire claimed structure of claim 1 above including the substrate is linked to the frame by means of just two tie bars.

Regarding claims 4-6 admitted prior art teaches substantially the entire claimed structure of claim 1 above except explicitly stating that the two tie bars are arranged on two adjacent corners of the substrate, on diagonally 15 opposite comers of the substrate and on one corner of the substrate and the other is arranged on one side of the substrate.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to arrange the two tie bars as claimed above, since it has been

held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

Regarding claims 9-13 admitted prior art teaches substantially the entire claimed structure of claims 1-6 above except explicitly stating that the substrate being linked to the supporting bars by means of a two-point linkage structure consisting of just two tie bars linked to the supporting bars.

Lim teaches (fig. 11, col. 7, line 21-26) parallel bar (frame) 570 and two tie bars 530 for supporting the silicon chip 505.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the two tie bar structure taught by Lim in the structure of admitted prior art in order to simplify the manufacturing process and also cut manufacturing cost.

Claims 7, 8 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over admitted prior art in view of Park et al. US patent No. 5,847,446.

Regarding claim 7 admitted prior art teaches (figs. 1A and 1B) substantially the entire claimed structure of claim 1 above except explicitly stating that the substrate is linked to the frame by means of just one tie bar.

Park teaches (col. 4 line 22-34, figs. 3-5) the possibility of using at least one tie bar (122) that is attached to the chip pad (120).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the one tie bar structure taught by Park in the structure of admitted prior art in order to simplify the manufacturing process.

Regarding claim 8 admitted prior art teaches (figs. 1A and 1B) substantially the entire claimed structure of claim 1 above except explicitly stating the just one tie bar is arranged on the substrate's gating corner.

Admitted prior art teaches (fig. 1B) using the upper left tie bar 13a for providing a gate for injecting encapsulation.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to situate the one tie bar structure taught by Park in the substrate gating area in order to simplify the manufacturing process.

Regarding claims 14-16, admitted prior art teaches substantially the entire claimed structure of claims 1-8 above except explicitly stating that the substrate being linked to the supporting bars by means of a one-point linkage structure consisting of just one tie bar linked to the supporting bars.

Park teaches (col. 4 line 22-34, figs. 3-5) the possibility of using at least one tie bar (122) that is attached to the chip pad (120).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the one tie bar structure taught by Park in the structure of admitted prior art in order to simplify the manufacturing process.

Conclusion

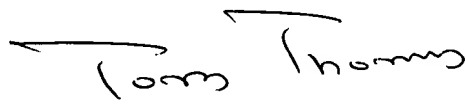
4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References C and D are cited as being related to packaging.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Admassu Gebremariam whose telephone number is 703 305 1913. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on 703-308-2772. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Samuel Admassu Gebremariam
September 17, 2002


TOM THOMAS
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800